

Docket No. 98-11CIP1RCE
PATENT

AMENDMENTS TO THE CLAIMS

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This listing of claims replaces all prior versions and listings of claims in the application:

Please cancel claim 1 without prejudice.

Claim 2. Cancelled.

Please cancel claims 3-9 without prejudice.

Claims 10-11. Cancelled.

Please cancel claims 12-14 without prejudice.

Claims 15-18. Cancelled.

19. (Previously presented) A computer-implemented method for generating a library design for a combinatorial library of materials, comprising:

providing a graphical user interface including a workspace for designing a library of materials;

defining one or more sources and one or more destinations, each source being electronic data representing a chemical or mixture of chemicals to be used in preparing the combinatorial library and each destination being electronic data representing an arrangement of cells;

displaying a visual representation of one or more of the one or more defined destinations in the workspace of the graphical user interface, each destination representation including a representation of one or more destination areas, each destination area including one or more cells in the corresponding arrangement;

receiving user input associating each of the one or more sources with one or more of the destination areas;

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receiving user input specifying a plurality of equations and associating each of the plurality of equations with one or more of the one or more destination areas;

solving the plurality of equations to calculate one or more amounts of one or more first chemicals or mixtures of chemicals represented by the one or more defined sources to be assigned to one or more cells in the one or more arrangements represented by the one or more defined destinations, the one or more amounts of the one or more first chemicals or mixtures of chemicals to be assigned to a given cell in the one or more arrangements being calculated according to a set of equations comprising a plurality of the equations, the equations in the set of equations being associated with the area or areas that include the cell, the one or more first chemicals or mixtures of chemicals to be assigned to the given cell being determined by the one or more sources associated with the area or areas that include the cell; and

modifying the visual representation of the one or more defined destinations to include a visual indication of the one or more calculated amounts.

Claims 20-22. Cancelled.

23. (Previously presented) The method of claim 19, further comprising:

generating an error indicator signal if the plurality of equations cannot be solved for each cell in the one or more arrangements.

24. (Previously presented) The method of claim 19, wherein at least one of the plurality of equations is selected from the group consisting of:

a ratio equation defining an amount of one of the first chemicals or mixtures of chemicals to be assigned to a cell as a function of an amount of another chemical or mixture of chemicals to be assigned to the cell;

a volume equation defining an amount of one of the first chemicals or mixtures of chemicals to be assigned to a cell as a function of a total volume of a plurality of chemicals or mixtures of chemicals to be assigned to the cell; and

a mass equation defining an amount of one of the first chemicals or mixtures of chemicals to be assigned to a cell as a function of a total mass of a plurality of chemicals

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or mixtures of chemicals to be assigned to the cell.

Claims 25-26. Cancelled.

27. (Previously presented) The method of claim 19, wherein solving the plurality of equations comprises using matrix algebra techniques to solve the plurality of equations.

Claim 28. Cancelled.

29. (Previously presented) The method of claim 19, further comprising:
receiving an input defining a gradient mapping, the gradient mapping being electronic data defining a distribution pattern for distributing a second chemical or mixture of chemicals to cells in the one or more arrangements, the distribution pattern including a minimum and a maximum amount of the second chemical or mixture of chemicals to be assigned to any of a plurality of cells of the one or more arrangements and a gradient to be applied between the minimum and maximum amounts of the second chemical or mixture of chemicals across the plurality of cells; and
using the second mapping to calculate amounts of the second chemical or mixture of chemicals to be deposited in each of the plurality of cells;
wherein modifying the visual representation of the one or more defined destinations comprises modifying the visual representation to include a visual indication of the calculated amounts of the first and second chemicals or mixtures of chemicals.

Claims 30-36. Cancelled.

Please cancel claim 37 without prejudice.

38. Cancelled.

Please cancel claims 39-45 without prejudice.

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Claims 46-47. Cancelled.

Please cancel claims 48-50 without prejudice.

Claims 51-54. Cancelled.

55. (Previously presented) A computer program product on a computer-readable medium for generating a library design for a combinatorial library of materials, the computer program product comprising instructions operable to cause a programmable processor to:

provide a graphical user interface including a workspace for designing a library of materials;

define a set of one or more sources and one or more destinations, each source being electronic data representing a chemical or mixture of chemicals to be used in preparing the combinatorial library and each destination being electronic data representing an arrangement of cells;

display a visual representation of one or more of the one or more defined destinations in the workspace of the graphical user interface, each destination representation including a representation of one or more destination areas, each destination area including one or more cells in the corresponding arrangement;

receive user input associating each of the one or more sources with one or more of the destination areas;

receive user input specifying a plurality of equations and associating each of the plurality of equations with one or more of the destination areas;

solve the plurality of equations to calculate one or more amounts of one or more first chemicals or mixtures of chemicals represented by the one or more defined sources to be assigned to one or more cells in the one or more arrangements represented by the one or more defined destinations, the one or more amounts of the one or more first chemicals or mixtures of chemicals to be assigned to a given cell in the one or more arrangements being calculated according to a set of equations comprising a plurality of the equations, the equations in the set of equations being associated with the area or areas

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that include the cell, the one or more first chemicals or mixtures of chemicals to be assigned to the given cell being determined by the one or more sources associated with the area or areas that include the cell; and

modify the visual representation of the one or more defined destinations to include a visual indication of the one or more calculated amounts.

Claims 56-58. Cancelled.

59. (Previously presented) The computer program product of claim 55, further comprising instructions operable to:

generate an error indicator signal if the plurality of equations cannot be solved for each cell in the one or more arrangements.

60. (Previously presented) The computer program product of claim 55, wherein at least one of the plurality of equations is selected from the group consisting of:

a ratio equation defining an amount of one of the first chemicals or mixtures of chemicals to be assigned to a cell as a function of an amount of another chemical or mixture of chemicals to be assigned to the cell;

a volume equation defining an amount of one of the first chemicals or mixtures of chemicals to be assigned to a cell as a function of a total volume of a plurality of chemicals or mixtures of chemicals to be assigned to the cell; and

a mass equation defining an amount of one of the first chemicals or mixtures of chemicals to be assigned to a cell as a function of a total mass of a plurality of chemicals or mixtures of chemicals to be assigned to the cell.

Claims 61-62. Cancelled.

63. (Previously presented) The computer program product of claim 55, wherein the instructions operable to cause a programmable processor to solve the plurality of equations comprise instructions to use matrix algebra techniques to solve the plurality of equations.

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Claim 64. Cancelled.

65. (Previously presented) The computer program product of claim 55, further comprising instructions operable to:

receive an input defining a gradient mapping, the gradient mapping being electronic data defining a distribution pattern for distributing a second chemical or mixture of chemicals to cells in the one or more arrangements, the distribution pattern including a minimum and a maximum amount of the second chemical or mixture of chemicals to be assigned to any of a plurality of cells of the one or more arrangements and a gradient to be applied between the minimum and maximum amounts of the second chemical or mixture of chemicals across the plurality of cells; and

use the second mapping to calculate amounts of the second chemical or mixture of chemicals to be deposited in each of the plurality of cells;

wherein the instructions operable to cause a programmable processor to modify the visual representation of the one or more defined destinations include instructions operable to cause a programmable processor to modify the visual representation to include a visual indication of the calculated amounts of the first and second chemicals or mixtures of chemicals.

Claims 66-91. Cancelled.

92. (Previously presented) The method of claim 19, further comprising:

receiving user input dividing one or more of the one or more destination representations to define the destination areas.

Claim 93. Cancelled.

94. (Previously presented) The method of claim 19, further comprising:

in response to the user input specifying and associating the equations, modifying the visual representation of the one or more defined destinations to include a visual

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indication of the equations associated with the one or more destination areas.

95. (Previously presented) The method of claim 19, wherein:

defining the one or more sources comprises associating one or more of the chemicals or mixtures of chemicals with a type representing a class of chemicals to be used in preparing the combinatorial library;

receiving user input specifying a plurality of equations comprises receiving user input specifying one or more of the plurality of equations as a function of the type; and

solving the equations comprises solving the equations specified as a function of the type for a given destination area by substituting the corresponding associated chemical or chemicals associated for the type.

Claim 96. Cancelled.

97. (Previously presented) The computer program product of claim 55, further comprising instructions operable to cause a programmable processor to:

receive user input dividing one or more of the destination representations to define the destination areas.

Claim 98. Cancelled.

99. (Previously presented) The computer program product of claim 55, further comprising instructions operable to cause a programmable processor to:

modify the visual representation of the one or more defined destinations in response to the user input specifying and associating the equations to include a visual indication of the equations associated with the one or more destination areas.

100. (Previously presented) The computer program product of claim 55, wherein:

the instructions operable to cause a programmable processor to define the one or more sources comprise instructions operable to cause a programmable processor to

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associate one or more of the chemicals or mixtures of chemicals with a type representing a class of chemicals to be used in preparing the combinatorial library;

the instructions operable to cause a programmable processor to receive user input specifying a plurality of equations comprise instructions operable to cause a programmable processor to receive user input specifying one or more of the plurality of equations as a function of the type; and

instructions operable to cause a programmable processor to solve the equations comprise instructions operable to cause a programmable processor to solving the equations specified as a function of the type for a given destination area by substituting the corresponding associated chemical or chemicals associated for the type.